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Antiretroviral Therapy Contribution to Patients Health in New Juaben Municipality

Frederick Owusu[1] and Kwame Asare Gyasi-Agyei[2*]

[1]Pope John Senior High School and Minor Seminary, P.O.Box 370, Koforidua, Eastern Region, Ghana.
[2]Department of Applied Mathematics, Koforidua Polytechnic, P.O.Box 981, Koforidua, Ghana.

Authors' contributions

This work was carried out in collaboration among all authors. All authors designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. All authors managed the analyses of the study, managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Our study focused on identifying factors underlining the deteriorating health condition of people living with HIV/AIDS (PLWHA) in the New Juaben Municipality. After a review of the relevant literature, the following hypotheses were developed: the attitude of PLWHA to antiretroviral therapy (ART) is likely to affect their health condition; the fact of administering ART at designated clinics affects the attitude of PLWHA to ART and HIV/AIDS related stigma impacts negatively on the health condition of PLWHA. The objective of our paper was to look at the health status of PLWHA and the administration of ART in the New Juaben Municipality in the Eastern Region of Ghana. From the year 2000, PLWHA in the Eastern Region had been placed on ART. With Antiretroviral treatment, the situation in the New Juaben Municipality had not shown much improvement. One

**Corresponding author: E-mail: gaakus@yahoo.com;*

hundred and twenty (120) respondents were sampled from the New Juaben Municipality. Quantitative data was collected with mostly close ended questionnaire, analyzed with the Statistical Package for Social Sciences (SPSS) and Chi Square hypothesis was conducted for each of the hypotheses. The results of our study rejected the null hypotheses successfully. Therefore, a generalization could be made, implying that the findings about the statistics of the sample could be applied to the parameter of the population.

Keywords: Antiretroviral drugs; municipality; hypothesis; treatment; respondents; stigma; discrimination.

1. INTRODUCTION

It is not very clear where AIDS actually started, nevertheless, the first cases of AIDS were found in the United States of America in 1981, and then in Uganda in 1982. It is generally believed that cases of HIV/AIDS had been observed earlier on in the early 1970s. The virus that is generally believed to be causing AIDS, HIV-1 and HIV-2 were discovered in 1983 and March 1986 respectively [1]. The study does not intend to get involved in the forest of polemics surrounding HIV/AIDS; it rather intends to look at antiretroviral drugs and health status of people living with HIV/AIDS in the New Juaben Municipality.

A combination of new and emerging drugs provided an effective formula for treatment of the disease. By the end of the year 2009, more than 5 million people were on treatment [2]. Consequently, the number of people dying of AIDS and related cases decreased from a peak of 2.2 million in the mid-2000s to 1.8 million in 2010. A total of 2.5 million deaths in Low and middle income countries have been prevented since 1995, as a result of anti-retroviral therapy [3]. Advance treatment for HIV/AIDS in patients have dramatically extended the incubation period and AIDS survival time, while improving the quality of patient's life significantly [4]. West Africa is considered as the region least affected by HIV/AIDS in Sub-Sahara Africa and that general picture reflects in the case of Ghana. After the first HIV case in Ghana was reported in 1986, the disease spread slowly but steadily [5]. Heterosexual intercourse accounts for 80 percent of transmission of HIV cases. By the year 1994, an estimated 118,000 Ghanaians were living with HIV and the number more than tripled to about 404,000 in 2004, with a rise in the prevalence rate of 1.4% in 1994 to 3.6% in 2003. According to the Ghana AIDS Commission (GAC) 2011 report, the number of infected people is estimated to be 500,000 in 2015 [5]. In September 2000, the Ghana AIDS Commission was inaugurated to serve as the coordinating body for all HIV/AIDS related activities in Ghana. The objectives had been to reduce further transmission of infection and to mitigate the effects of HIV/AIDS on infected and affected people [6].

WHO (2003), reviewed that the effects of ART on people's physical appearance can result in forced disclosure and discrimination based on appearance. It is interesting to note that HIV/AIDS-related stigma is not a straightforward phenomenon as attitudes towards the epidemic and those affected vary massively [7]. It is difficult to assess the accuracy of this statement as levels of stigma are hard to measure and a number of small-scale studies have shown that the relationship between increased access to HIV treatment and a reduction in stigma is not always clear [8]. A study in Tanzania found that stigma caused by the perception of people living with HIV as weak and therefore a burden on the community had decreased with the uptake of treatment [9]. The fact that stigma remains in developed countries where treatment has been widely available for over a decade, also indicates that the relationship between HIV treatment and stigma is not straightforward [10]. An estimated 27 percent of Americans would prefer not to work closely with a woman living with HIV. Women with HIV or AIDS may be treated very differently from men in some societies where they are economically, culturally and socially disadvantaged. They are sometimes mistakenly perceived to be the main transmitters of sexually transmitted diseases (STDs) [11]. The WHO cites fear of stigma and discrimination as the main reason why people are reluctant to be tested, to have their HIV status to take antiretroviral drugs. Studies by the WHO in India, Indonesia, the Philippines and Thailand found that 34 percent of respondents reported breaches of confidentiality by health workers [5].

This study was carried out to investigate the rationale behind the perennial deteriorating health condition of the HIV/AIDS infected people

in the New Juaben Municipality, and to investigate whether the attitude of PLWHA to antiretroviral drugs impacts on their health condition. Our study also sought to find out how the fact of having specific centres administering antiretroviral drugs impact negatively on the attitude of PLWHA to antiretroviral drugs, and to investigate whether HIV/AIDS related stigma contributes to the deteriorating health condition of PLWHA.

2. MATERIALS AND METHODS

A sample size of 120 was selected at random from PLWHA in the New Juaben Municipality and close-ended questionnaire administered to them. For readers to understand and better appreciate what the research seeks to establish, it is of untold importance to explain the modalities by which the research was carried out.

2.1 Study Area

The study area is the New Juaben municipality in the Eastern Region of Ghana. Koforidua doubles as the capital of the Eastern Region as well as the New Juaben Municipality. The Eastern Region, one of the ten administrative regions of Ghana, is located in the southern part of Ghana. The dominant inhabitants and natives of the Region are Akans. Consequently, Akan and English are the main spoken languages. The population of the Region is 2,108,852 accounting for 11.5% of the entire population of the country. Since the New Juaben Municipality is the study area, the report will focus on a description of the Municipality [12]. The New Juaben Municipality covers an estimated area of 110 square kilometers constituting 0.57 % of the total land area of the Eastern Region. According to the 2010 population census, the municipality has a population of 191,525 which is projected to be 195,547 by 2013, with a growth rate of 2.6%. Females constitute the dominant group, about fifty-two percent of the population. The New Juaben Municipality has two full-fledged hospitals, namely the Koforidua Regional Hospital and the St. Joseph Hospital. The Regional hospital is a government hospital whereas the St Joseph Hospital is Catholic. The two hospitals serve people in the municipality as well as people from other municipalities and districts. That brings some level of pressure on the Institutions, yet, they continue to offer health services to the people. In addition, there are three (3) Health clinics, two (2) Community clinics, ten (10) private clinics and three (3) maternity homes [12].

2.2 Study Design

We used probability sampling method, which gives all the sampling units equal chances of being selected. Simple random samplings as well as snowball sampling were employed. With snowball sampling, infected people were used to identify other infected people. However, in order to ensure equal chance of selecting respondents from both sexes, stratified sampling by gender was employed. Both primary and secondary data were used in the study. The primary data comprises information gathered from the survey by the researcher from administering structured questionnaire, with the help of research assistants who have been trained to know how to approach the people. The secondary data include official reports and books, journal articles, as well as internet sources. The Statistical Package for Social Sciences (SPSS) 16.0 version was used to analyze the data. We used SPSS to generate frequency tables, pie charts and bar charts as the occasion demands, to give picturesque representation of the findings. Then, the chi-square hypothesis testing was used to find out whether the statistics of the samples hold good for the parameters of the population.

2.3 Attitude of PLWHA to Antiretroviral Drugs and Their Health Condition

The first hypothesis of the study states that the attitude (positive or negative) of PLWHA to Antiretroviral therapy (ART) affects their health status. The next question on the attitude of respondents to ART was cross-tabulated with the gender of respondents to find out between females and males who are stricter with the ART. Table 1 presents the responses.

With the exception of the 12% who indicated that they are not very strict to the regime where 8% are men and 4% women, in all the other category of answers, the females were in the majority as shown in Table 1. What could be said is that since in majority of cases, it is women who spend much time with their children and care for the children, many women want to live longer and are, therefore, very strict with the regime. There is strict adherence in men than in women, but that observation is not supported by this study as the proportion of women who are strict to the adherence is higher than in men.

Table 1. Respondents' attitude to ART

What is your attitude to the prescribed regime?	Gender of respondents				Total	
	Female		Male			
	No.	%	No	%	No	%
Very Strict	54	45%	38	32%	92	77%
Not very Strict	5	4%	9	8%	14	12%
I rarely take it	5	4%	4	3%	9	7%
No response	5	4%	0	0%	5	4%
Total	69	57%	51	43%	120	100%

Respondents were asked to back their attitude to the ART with reasons and from their responses a significant majority of 73% of respondents said their health has improved with the ART, whereas 11% stated that the disease will kill them anyhow, that suggests a lackadaisical attitude to the regime. This response corroborates the attitude of rural people toward ART. Rural people believed that ART does not work because patients die eventually. Other responses include, I sometimes forget – 8%; I don't experience any improvement in my health – 4%, and it is a spiritual disease – 2%. Seventy-six percent of respondents stated that their health has improved tremendously, 17% said it is okay while 5% found it difficult to tell. Adding the first two categories of response, 93% of respondents could state that their health has improved after taking the drug. This finding goes to confirm that adherence makes ART effective. Following this lead, respondents were asked if they considered their attitude to the drug to be responsible for the change in their health condition. The response showed that seventy-eight percent had no doubts that their attitude to the drug is responsible for the improvement recorded in the health condition. The issue of attitude to the drug which has also been referred as adherence is largely believed to be responsible for improvement in the health status of PLWHA. The current study confirms what earlier researchers had established that there exist correlation between adherence and the health status of PLWHA. The Chi square computed = 34.851 was more than the critical value of 16.919 at 5% significant level, we rejected the null hypothesis H_o successfully in favour of the alternative hypothesis H_1. What can be said of the statistics of the samples could also be said of the parameters of the population. That allows us to make a generalization that the more PLWHA adhere strictly to the prescription of Doctors concerning ART, the better their health status can become.

2.4 Specific HIV/AIDS Clinics and the Attitude of PLWHA to Antiretroviral Drugs

The issue here is to find out whether PLWHA take their drugs from a specified clinic, and if yes, does the practice leave them discredited? So respondents were asked to identify the type of treatment most PLWHA prefer and 75% of them said they prefer orthodox treatment while 25% said they prefer herbal treatment. The next thing was to find out whether PLWHA are treated as out-patients or in-patients. More than half (54%) of the respondents indicated that they are treated as out-patients, but a more significant proportion (31%) also said they are not treated as out-patients, whereas 15% of them refused to answer the question. However, the majority of them are treated as out-patients. Respondents were further asked to describe where they take their drugs, and 95% of them pointed out that they take their drugs from a specific treatment site, while only a comparatively insignificant proportion of 5% said they pick the drugs at the general dispensary of the Hospital or clinic. As the issue is about stigma and discrimination, it was necessary to find from respondents if they feel comfortable about where they take their drugs. This was cross-tabulated with the gender of respondent with the view to finding out how the feelings are distributed along gender lines, and the results are shown in Table 2.

Majority of respondents (56%) indicated that they are not comfortable taking their drugs from a specific site and out of that 30% were male and 26% female as shown in Table 2. What that means is that in matters of HIV/AIDS, men feel less comfortable than women to allow their back stage become front stage.

After it had become so clear that majority feel uncomfortable taking their drugs from specific centres, respondents were asked to substantiate their answers. It became clear that respondents

did not want other people to know their positive HIV status. Hence, the majority of respondents (33%) indicated that by going to specified centres for their drugs, other people can easily identify them as HIV positive. The next highest proportion of respondents (20%) observed that the situation breaches confidentiality. Some 19% of respondents also said they feel ashamed by the situation. Another response was that, respondents feel stigmatized by Society, a response which attracted 15% of respondents. Seven percent of the respondents said categorically that the scenario of having a specified clinic for administering ART destroys their back stage. All the answers converge on the fact that respondents feel that the scenario will leave them stigmatized and discredited. Afterwards, respondents were asked if the situation affects their attitude (adherence) to antiretroviral drugs, and their answers are shown in Table 3.

The responses were cross-tabulated with the age grouping of the respondents. Out of the 60% who consider the situation to be affecting their attitude to ART, 13% fall within the 40 – 44 age group followed by the 35-39 age with 12%. In general, when people advance in age, they get less shy as shown in Table 3, the paucity of proportions in the advance age groups substantiates the fact. Yet all the age groups see the situation affecting their attitude to ART. The irony is that, even, it comes to those who responded negatively to the question, the same 40-44 age group topped the percentage with 12%, comparatively higher than all the others. Two percent in the 20-24 age group stated that the situation affects their attitude somehow, while 2% in the 50-54 age group did not respond to the question. At this point, the question was put to respondents to find out if they think that in general the fact of having specified HIV/AIDS clinics affects the attitude of PLWHA to ART? An overwhelming majority of 73% of respondents responded positively to the question whereas 25% answered negatively. Generally, most people want to remain discreditable and not discredited. Thus most people would be happy if they were not supposed to go to identifiable clinics to get their drugs, at least, they could maintain some gap between their front stage and their back stage.

The Chi square computed = 151.9072 was more than the critical value of 12.592 at 5% level of significant so we rejected the null hypothesis, H_0. We concluded that when ART is administered at specified sites, it affects the attitude of PLWHA to antiretroviral drugs. Hence, what was said about the statistics of the sample could now be generalized to cover the parameters of the population.

2.5 HIV/AIDS Related Stigma and the Health Status of PLWHA

The phenomenon of stigma makes people recoil into their shells, and not participate publicly in society, and since it is in the nature of human beings to socialize with other people, stigma is one thing that everybody tries to avoid. Thus, it became clear that stigma affects the behavior and attitude of people. Consequently, it was deemed necessary to look into the health status of PLWHA and the relation it has with stigma. First, respondents were asked to describe the attitude of health personnel toward PLWHA, and their responses are shown in Fig. 1.

Forty-eight percent of respondents indicated that their attitude is very cordial. Out of the 48%, 30% are female and 18% male. That response was followed by 38% of respondents (20% female and 18% male) who reported that the health personnel exhibit cordial attitude to PLWHA. Only 7% of respondent said that health personnel are hostile and another 7%, that health personnel are skeptical as shown in Fig. 1. After stating some of the HIV/AIDS related stigma, respondents were asked to indicate if they think that in general PLWHA are stigmatized. The responses were cross-tabulated with the gender of respondents to show the responses are distributed along gender lines. Out of the 86% of respondents who responded positively to the question, 45% are female and 41% male. This means that both the female and male respondents feel about the same way toward the situation. Thirteen percent responded negatively to the question, but this time around, there were 11% female and 2% male, quite a big difference. So generally, we can conclude with the respondents that PLWHA are stigmatized. Subsequently, the question was put to find out if the situation of stigma makes it difficult for respondents to visit the HIV/AIDS sites. A significant majority of 79% responded positively while 19% answered No to the question. Respondents were then asked to state if according to their assessment, HIV/AIDS stigma influence the health status of PLWHA. A commanding majority of 93% of respondents are of the view that the stigma associated with HIV/AIDS influences the health status of

PLWHA. As compared to the 93%, the 5% of those who indicated 'No' to the question is insignificant. The Chi square computed = 62.845 was greater than the critical value of 9.488 at 5% level of significant, so we rejected the null hypothesis, *H*o successfully and concluded that HIV/AIDS related stigma negatively affects the health status of PLWHA.

The study set out to find out what factors influence the health condition of PLWHA. It intended to find out whether the attitude of PLWHA to ART affects their health condition; whether the fact of administering ART in specified sites affect the attitude of PLWHA and lastly, whether HIV/AIDS related stigma influences the health condition of PLWHA. Data were collected and analyzed.

According to the study more females (58%) were captured than males (42%). The age distribution shows that even though from the 50 years upward, the proportions go down, the data show that HIV/AIDS affect people of all ages. Also the study captured more Christians (63%) than other religions. It also became clear that people with only elementary/JSS and secondary/SSS/Vocational education constituted the majority of people infected, 34% each. From the point of view of employment, the self-employed are in the majority (41%). Prevalence is associated with higher salary levels (GH¢351 – 18% and GH¢401 – 39%). The data shows that married people are the most infected (44%) and out of that, 23% are male and 21%, female.

It became clear that respondents are more knowledgeable on HIV/AIDS; about 63% defined HIV/AIDS as 'Human Immunodeficiency Virus/Acquire Immune Deficiency Syndrome. Ninety percent of respondent indicated that HIV/AIDS is a viral disease, transmitted largely through sexual intercourse (24%), using unsterilized needles (22%) and blood transfusion (20%). Again respondents were able to list a number of symptoms: growing lean; protracted fever, loss of appetite, sores around the genitals, shingles and many others. Respondent knew that HIV/AIDS has no cure (93%) but rather there is a treatment (98%), which is antiretroviral drug (80%).

Table 2. Sentiments of respondents toward where they take their drugs

Are you comfortable with the idea of having specific sites designated for HIV/AIDS treatment?	Gender of respondents				Total	
	Female		Male			
	Freq.	%	Freq.	%	Freq.	%
Yes	36	30%	14	12%	50	42%
No	30	26%	37	30%	67	56%
No response	3	2%	0	.0%	3	2%
% of Total	69	58%	51	42%	120	100%

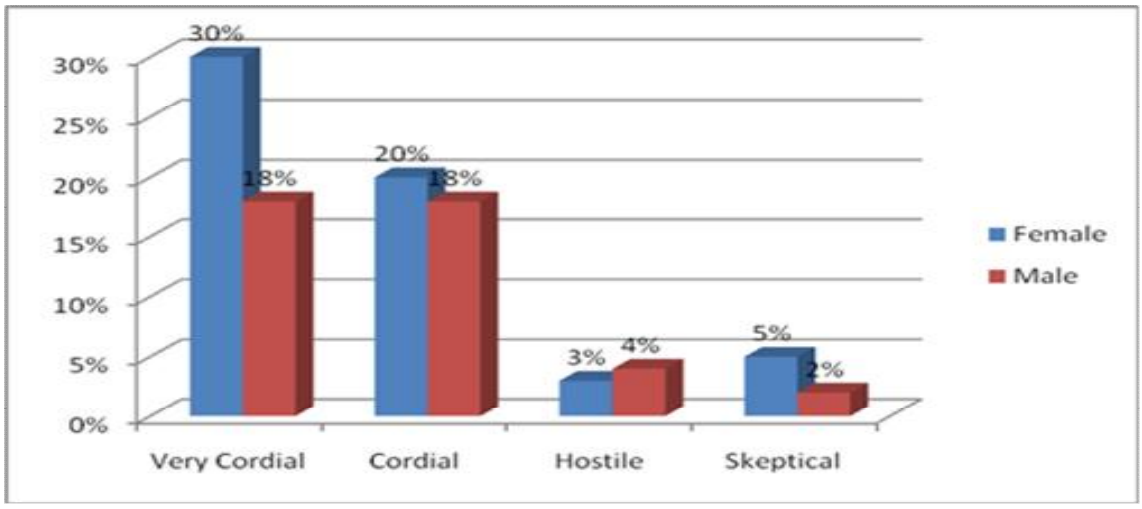

Fig. 1. Attitude of health personnel toward PLWHA

Table 3. Respondents' attitude to ART in the face of specified HIV/AIDS clinics cross-tabulated with their age groupings

Age of respondents	Does the situation affect your attitude (adherence) to antiretroviral treatment?								Total	
	Yes		No		Somehow		No response			
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Frequency	Percentage (%)
20-24	2	2%	4	3%	2	2%	0	0%	8	7%
25-29	11	9%	4	3%	0	0%	0	0%	15	12%
30-34	8	7%	4	3%	0	0%	0	0%	12	10%
35-39	14	12%	4	3%	0	0%	0	0%	18	15%
40-44	16	13%	15	12%	0	0%	0	0%	31	26%
45-49	12	10%	6	5%	0	0%	0	0%	18	15%
50-54	5	4%	2	2%	0	0%	3	2%	10	8%
55-59	2	2%	4	3%	0	0%	0	0%	6	5%
≥60	2	2%	0	0%	0	0%	0	0%	2	2%
Total	72	60%	43	36%	2	2%	3	2%	120	100

The study found out that a good number of respondents (77%) are very strict with the prescription of the ART by a doctor, the rationale being that their health has improved with the drug (73%). Prior to taking the ART, their health was poor by a greater majority of them (76%) reported that after taking the drug, their health has improved tremendously. It was also noted that an overwhelming majority of respondents (81%) attribute the improvement in their health to the ART. Eventually, it was concluded that their attitude to the ART was responsible for their health status (78%).

It was discovered that most respondents (75%) stated that they prefer orthodox treatment and not only are PLWHA treated as outpatients (54%), but also they pick their drugs from specific centres/clinics earmarked for HIV/AIDS treatment. The study found out that most PLWHA are not comfortable with the fact of having to take their drugs from designated sites for the ART (56%). The reasons given for their reluctance to visit the specified sites are numerous; it makes me easily identified as HIV/AIDS patient by other people (33%); it breaches confidentiality (20%). Other reasons are: it makes me ashamed of myself (19%); I am stigmatized by society (15%) and many others. It was also discovered that respondents blame the specifically designated clinics for their reluctance to pick their drugs (73%).

It was discovered that most respondents found the attitude of most health service providers to be very cordial (48%) and cordial (38%) whereas they found the general public to be discriminatory and negative. Consequently, most respondents felt stigmatized (73%) and stated that they perceived most PLWHA to be largely stigmatized. Giving the stigma, respondents indicated that they found it difficult to visit the HIV/AIDS sites (79%). Consequently, respondents were of the view that HIV/AIDS related stigma influences the health status of PLWHA (93%).

3. CONCLUSION

The data was basically quantitative and after the investigation, the data supported all the hypotheses, thereby leading to the following conclusion: that adherence on the part of PLWHA to ART affects their health status. In other words, if PLWHA stick faithfully to the ART dosage given them by doctors, their health improves and vice versa.

With regard to the second hypothesis, the data supported a position that PLWHA feel uncomfortable to visit specified sites for their drugs as that makes them easily identifiable as PLWHA, thereby making their back stage become front stage. So the study confirmed the hypothesis that having specific or identifiable sites for ART administration negatively affects the health status of PLWHA.

The third hypothesis was that HIV/AIDS related stigma affects the health status of PLWHA. The data analysis culminated in the affirmation that PLWHA feel stigmatized by the attitude of general public toward them and that makes it difficult to access the ART drugs. The consequent finding was that, HIV/AIDS stigma influences the health status of PLWHA. They fear that their back stage will become their front stage thereby leaving them discredited. From our conclusions all the stated hypotheses have been answered.

4. RECOMMENDATIONS

1. Family members must be encouraged to support their relatives living with HIV to adhere to the Doctors' prescription.
2. To make sure that people's back stage does not become their front stage, there should not be specified sites for the administration of ART; they must be administered at the general dispensary.
3. HIV/AIDS education must be intensified so that the general populace can become less apprehensive and less discriminatory.
4. Support groups should be set up, so that by counting on support from the group, they will not be overwhelmed by any discrimination from anybody.

CONSENT

Not applicable.

ETHICAL APPROVAL

Not applicable.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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